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MEDICAL NEWS LETTER

Vol. 42

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No. 5

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Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

The issuance of this publication approved by the Secretary of the Navy on 28 June 1961.

Leukeran - An Adjunct in Managing Carcinoma of the Ovary *

By CAPT Thomas B. Leberherz MC USN, Chief of Obstetrics and
Gynecology Service, USNH Oakland, Calif. **

An evaluation of Stage III and IV Carcinoma of the Ovary treated at the National Naval Medical Center from 1953 to 1958 revealed a zero percentage, 5-year salvage, and an average salvage time from diagnosis to death of 12.8 months. These patients had been treated with conventional surgery and 2 mev X-ray therapy. In view of these poor results and the recommendation of CAPT J. Wilson Huston MC USN, a program utilizing Leukeran, or chlorambucil, was instituted. The drug was used either with surgery alone; with surgery, but preceding X ray; or on patients in whom surgery and X ray had been used to a maximum extent, but recurrences were evident.

A review of results in patients treated from 1 January 1953 to 31 December 1961 revealed the following: during this time, 36 patients whose diagnosis was carcinoma of the ovary Stage III or IV were seen and treated; these 36 patients received a total of forty-four combinations of management; and the average salvage time for each combination was calculated as follows:

<u>Method</u>	<u>Number of Patients</u>	<u>Salvage Time Average</u>	<u>Living</u>
1. Surgery alone	5	5.3	0
2. Surgery and X ray	18	15.4	1
3. Surgery and Leukeran	11	15.9	2
4. Surgery, Leukeran, and X ray	4	34.6	2
5. Surgery, X ray, and Leukeran	6	36.3	3

Average salvage time is defined as the time from diagnosis to death, diagnosis to last follow-up visit if patient is living, or diagnosis to death when recurrence necessitates institution of another modality. It would appear that by calculating average salvage time the alkylating agent, Leukeran, is as good as X ray in primary management of carcinoma of the ovary following surgery, and that this figure will increase since 2 of 11 patients are still living. It was observed that, as an adjunct to X ray, Leukeran given either before or after X ray favorably affects the average salvage time in carcinoma of the ovary.

One situation in which the drug's effect has been especially gratifying is in management of pleural and peritoneal effusions associated with carcinoma of the ovary. In all cases where effusion was a problem—whether the patient

* Presented before the San Francisco Gynecological Society on 12 March 1963.

** Now under orders to report to USNH, San Diego, Calif., as Chief of Ob-Gyn Service. Formerly Chief of Ob-Gyn at USNH, NNMC, Bethesda, Md., where this work was done.

had been treated before with radioactive gold, external radiation, or intraperitoneal alkylating agents—immediate response was uniformly good and, in the majority of cases, the effusions remained well controlled with maintenance therapy.

It is believed that Leukeran, an oral outpatient medication, can be controlled adequately through outpatient laboratory studies and visits, and that this drug is effective in prolonging the average salvage time in patients with advanced carcinoma of the ovary. In addition, Leukeran appears to be a drug which may be used before or after X ray therapy; in 83% of the writer's cases, it was found to be an effective adjunct in managing ovarian malignancy.

* * * * *

Disease in Man Associated with Unclassified
Acid-Fast Bacteria

J. J. Merckx MD, Alfred G. Karlson Ph D, and David T. Carr MD.*
Proceedings of the Staff Meetings of the Mayo Clinic 38(14): 271-279,
July 3, 1963.

It has been demonstrated clearly that unclassified strains of mycobacteria are associated with chronic systemic diseases in man (1-11). Currently, these microorganisms are not given species designation because they have no known distinctive features. However, a convenient grouping proposed by Runyon (6) will be used: photochromogens (group I), which become yellow when exposed to light; scotochromogens (group II), which become yellow when cultured in darkness as well as in light; nonchromogens (group III), which do not form yellow or orange pigment; and rapid growers (group IV), which grow luxuriantly in a few days.

The diseases caused by these unidentified acid-fast microorganisms are often similar to tuberculosis in clinical, roentgenologic, and pathologic aspects; and variable degrees of sensitization to tuberculin may be associated with them (12). The microorganisms usually are relatively resistant to the specific antituberculosis drugs and they rarely respond to chemotherapy. Transmission of infection from one person to another is not known to occur; hence, hospitalization of patients in a tuberculosis sanatorium for isolation is not necessary. Indeed, such hospitalization may be undesirable because of the risk of exposure to tuberculous patients.

An additional problem for the physician suspecting mycobacterial origin of a lesion is that unclassified acid-fast microorganisms are sometimes present in specimens, such as sputum and gastric washings from apparently healthy persons (13-16). It is common knowledge among bacteriologists that unclassified acid-fast bacteria occur in tap water, dust, air, and

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Dr. Carr is in the Section of Medicine.

even in supplies of distilled water, and that these cannot be easily distinguished from some that are found in specimens from patients. A diagnosis can be made only by close collaboration of clinician and microbiologist.

In the following report, the authors present some data concerning patients at the Mayo Clinic from whom unclassified mycobacteria were isolated in the period from October 1956 through October 1962. The six patients in this study with lesions of bone, joint, and tendon sheaths that are associated with unclassified mycobacteria have been reported previously by Kelly, Weed, and Lipscomb (17).

MATERIALS AND METHODS

Pertinent laboratory and clinical data were obtained from the records of 294 cases in which unclassified mycobacteria were cultured. The distribution of microorganisms among Runyon's categories was: photochromogens, 30; scotochromogens, 155; nonchromogens, 98; rapid growers, 9; and a mixture of scotochromogens plus nonchromogens, 2.

In only 37 of the 294 cases could the observed lesions be attributed to the unclassified mycobacteria with adequate certainty. One criterion for selecting these cases was isolation of the same strain of microorganisms on at least three occasions in the presence of suggestive clinical evidence, while no other known pathogenic microorganism could be found (except in three cases as noted under Findings and Comment). The criterion in surgical cases was culture of mycobacteria from the resected specimen. In 2 cases, only two successive isolations of the microorganism were made, but they are included in the 37 cases because of the clinical and roentgenographic evidence of a chronic pulmonary infection in which no other pathogenic microorganism was found. In 52 other cases, the involvement of the unclassified mycobacteria in the etiology of the lesion could not be definitely ruled out, but the significance of their presence was not clear. In the remaining 205 cases, the isolation of the unclassified mycobacteria was judged to be unrelated to any clinical syndrome. In this report, the writers include only the 37 cases in which it appeared that the mycobacteria were responsible for the disease.

During the period of study, approximately 36,000 specimens were cultured for acid-fast bacilli. Of the 18,000 patients represented, approximately 730 (4.1%) were found to be infected with *Mycobacterium tuberculosis*. The 37 patients who—according to the authors' criteria—had disease due to unclassified mycobacteria were 0.2% of the 18,000 tested by culture for acid-fast bacilli and 5% of those found to have tuberculosis.

FINDINGS AND COMMENT

The 37 cases were distributed as follows: photochromogens, 14; scotochromogens, 7; nonchromogens, 12, and rapid growers, 3; and a mixture of scotochromogen and nonchromogen, 1. Photochromogens were associated with *Cryptococcus neoformans* in one case of pulmonary granuloma. *Staphylococcus aureus* was associated with photochromogens in a case of epididymitis and with scotochromogens in a case of chronic subcutaneous lesion.

Sixty-eight percent of the cases were of pulmonary involvement as is shown in Table 1. This does not mean necessarily that the pulmonary system is more commonly involved; it may reflect the greater number of specimens of pulmonary origin that were examined for acid-fast bacilli. Ordinarily, bacteriologic examination for acid-fast bacilli is made only when tuberculosis is

Table 1
Source and Variety of Mycobacteria in 37 Patients

Source	Photo-chromogen	Scoto-chromogen	Non-chromogen	Rapid grower	Total
Lung	11	3	8	3	25
Bone and joint	1	2*	4*	—	6*
Lymph node	0	3	1	—	4
Epididymis	1	—	—	—	1
Larynx-pharynx	1	—	—	—	1

*One case (septic arthritis of knee) had both scotochromogens and nonchromogens.

suspected. Perhaps a wider search for mycobacteria in all kinds of specimens would disclose a wider distribution. Involvement of joints and tendon sheaths may be produced experimentally in rabbits by photochromogens, nonchromogens, *Myco. avium*, and attenuated *Myco. avium* (18). The authors have seen extensive involvement of joints and periarticular tissue in mice that were infected intravenously with nonchromogenic mycobacteria.

Distribution

Sex, Site of Lesion, and Age. Of the 37 patients, 25 were male and 12 were female. No correlation was discernible between the site of the lesion and the variety of mycobacterium. The ages of the patients ranged from 10 months to 80 years; 65% were in the fourth to the sixth decade (Table 2). It is noteworthy that, of the 4 patients in the first decade, 3 had scotochromogens that

Table 2
Distribution of Patients According to Age,
Variety of Mycobacterium, and Site of Lesion

	Age, decade								Total
	1	2	3	4	5	6	7	8	
Variety of mycobacterium									
Photochromogen	1		2	2	5	3	1		14
Scotochromogen	3			1	2	1			7
Nonchromogen				1	2	5	1	3	12
Rapid grower			1			1	1		3
Mixed (nonchromogen and scotochromogen)				1					1
Site of Lesion									
Lung	1		2	3	8	8	2	1	25
Bone and joint			1	2		2		1	6
Lymph node	3							1	4
Larynx-pharynx					1				1
Epididymis							1		1
Total	4	0	3	5	9	10	3	3	37

were isolated from lymph nodes. Scotochromogens have been isolated in cases of adenitis among children of various countries (19-21).

Geography. Some evidence indicates that infection from unclassified mycobacteria has definite geographic distribution. For example, infection with nonchromogenic varieties is said to occur most commonly in the southeastern part of the United States (22). In the authors' series, however, 28 of the 37 patients (76%) lived in the midwest and the distribution seemed similar to that of Mayo Clinic patients in general. Incidentally, some of the first reported cases of infection with nonchromogenic mycobacteria involved patients who lived in Minnesota (1, 2, 11).

Other Factors. Occupation and environment did not seem to be important in the distribution. There were 4 farmers, 8 laborers, 14 clerical and professional workers, 7 housewives, and 4 children. The professional workers included 2 physicians, one osteopath, and one nurse.

Seven patients reported some contact with tuberculous persons. Most knew of no contact with tuberculous patients. There was no history of contact with patients who had infection with unclassified mycobacteria.

Symptoms. Of the 25 patients with pulmonary lesions, 5 were asymptomatic, their lesions being found on routine roentgenologic examination. Various symptoms were reported by the other 20: chronic productive cough in 15; chest pain in 5; hemoptysis in 5; weight loss in 3; chills and fever in 3; and dyspnea in 2. The 4 patients with lymphadenitis and the one with epididymitis had an unexplained painless swelling as their chief complaint. Among the 6 orthopaedic patients, there were 5 with pain, 2 with swelling of a joint, and 2 with limitation of movement. The main complaint of the patient with pharyngeal and laryngeal lesions was chronic soreness of the throat.

Roentgenographic Findings in Pulmonary Cases. Roentgenograms, available for 24 of the 25 cases of pulmonary involvement, revealed cavitating lesions in 12, circumscribed lesions without cavities in 7, and diffuse bilateral pathologic changes of varying degree in 5. Relationship between the type of pulmonary lesion and the kind of microorganism was not significant.

Histopathologic Appearance. Tissue was available from 25 cases for histopathologic examination. Viewing the sections as unknowns, one could not tell which of the four types of mycobacteria had caused the lesions. Indeed, the pulmonary lesions were, in most instances, compatible in appearance with lesions due to *Myco. tuberculosis*. A similar observation had been made by others (23). An exception was one case in which a photochromogen was isolated and a lung biopsy revealed only iron pigment in histiocytes and fibrosis with no chronic or acute pulmonary inflammatory changes. Caseous lesions with and without cavitation were associated with each of the four groups of mycobacteria. Noncaseous granulomas were also found in patients with photochromogens, scotochromogens, nonchromogens, or rapid growers. Only nonspecific inflammatory changes were found in a case of arthritis with infection from scotochromogens, a second case of arthritis with infection from nonchromogens, and a case of tenosynovitis of a finger with infection from both scotochromogens and nonchromogens. No single criterion appeared to differentiate the lesions histopathologically.

Tuberculin Tests. Results of tuberculin tests, available for 23 patients, (Table 3), show that some failed to react positively to 5 and even to 250 tuberculin units of purified protein derivative (P.P.D.). However, positive reactions to 5 or 250 tuberculin units were recorded in some cases among each of the four mycobacterial groups.

Table 3
Results of Tuberculin Test in 23 Patients
With Various Strains of Mycobacteria

Test and results	Variety of mycobacteria			
	Photo-chromogen	Scoto-chromogen	Non-chromogen	Rapid grower
5 TU,* positive	3	4	3	2
5 TU, negative 250 TU, positive	3	1	1	1
5 TU, negative 250 TU, negative	2	1	2	0

*TU = tuberculin unit; 5 TU = 0.0001 mg. P.P.D.; 250 TU = 0.005 mg. P.P.D.

Associated Lesions. Fifteen of the 37 patients had coexisting lesions which may have predisposed them to infection with the mycobacteria. In one of the 25 pulmonary cases, *Cryptococcus neoformans* was associated with photochromogens. Infection with *Myco. tuberculosis* had preceded infection with nonchromogens in another case. Minimal silicosis was present in one case. Bronchiectasis was observed in 2 patients. Bronchial adenoma (carcinoid type) was associated with nonchromogenic infection in one instance. Chronic aspiration pneumonitis associated with achalasia of the esophagus was thought to have had an influence in a case of infection with nonchromogens and another of infection with rapid growers. Coexistence of achalasia of the cardia and infection of the lung by saprophytic mycobacteria have been described by Gibson (24). Photochromogenic infections of the lung were associated with severe emphysema in one patient and idiopathic hemosiderosis was observed in another.

Of the 6 patients who presented lesions of the bones, joints, or tendon sheaths, 4 had long histories of pain and swelling of the affected joint, and had received repeated intra-articular injections of cortisone. In one of these cases staphylococci (coagulase-negative) as well as photochromogens were isolated from the surgical specimen. *Staph. aureus* also was isolated from the granulomatous lesion of the epididymis that was associated with photochromogens.

Treatment. Surgical treatment (excision, preferably, or incision and drainage) cured all nonpulmonary patients but 2 whether or not antituberculosis drugs (streptomycin, isoniazid, para-aminosalicylic acid) were given. Surgical treatment was successful in 10 pulmonary cases. In one other case of lung infection (from photochromogens), lobectomy failed to cure the patient who, 9 months after the operation, still had gastric washings that were positive for photochromogens and enlarging lesions as demonstrated roentgenographically. This patient had been treated with isoniazid (300 mg once a day) postoperatively. Of 14 patients who had pulmonary lesions that were treated medically, 7 did not receive any antituberculosis chemotherapy; of the seven,

3 improved, 2 remained unchanged, and 2 showed progressive worsening of their lesions. Seven other patients with lesions of the lung were treated with antituberculosis drugs (streptomycin, isoniazid, para-aminosalicylic acid, viomycin, pyrazinamide cycloserine); of these 7, 3 improved, 2 showed no changes, and 2 worsened considerably in spite of a very active chemotherapy program.

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* * * * *

Although they live almost exclusively on camel's milk, which contains an excess of lipids, coronary disease is extremely rare among the nomadic herds-men of the Somali plains, and their blood cholesterol level is low. (Page 305)

It is estimated that at least 1200 doctors will have to qualify in Africa each year for the next 20 years if the ratio of physicians per population in that continent is to be raised from 1 to 20,000 to 1 to 10,000. (Page 281)

—WHO Chronicle, August 1963

Hearing Conservation Program Evaluation

CAPT Russell G. Witwer MC USN, LT Brian G. McDade MC USNR,
and LTJG C. C. Cole Sr, MSC USN. Aerospace Medicine 34(5) May '63.

This article presents a summary of an active hearing conservation program in operation at the Second Marine Aircraft Wing and the U. S. Marine Corps Air Station, Cherry Point, N. C., during the past two years. From 1 May 1961 to 1 May 1962, 8962 audiometric tests were performed; 6241 were military and 2721 were civilian. A 10-man testing booth has enabled the writers to conduct an accelerated and continuing program.

The measurement of any progressive program is a periodic check system to ascertain the effectiveness of its directed efforts. This has been attained by the establishment of an automatic program to include all military and civilian personnel, Wing and Station, for audiometric testing annually. A running inventory is maintained by IBM computation from material obtained through direct interviews, case histories, and preventive measures. The latter includes posting of noise hazardous areas, education of exposed personnel reporting to the sources and effects of sound, and the provision of adequate testing facilities and protective devices.

Any case showing a significant hearing loss, either static or progressive, is referred to a permanently assigned medical officer for interview, examination, and recommended disposition. Such recommendations range from indoctrination in the use of protective devices, removal from a working area with audiometric examination every 30 days, actual permanent removal from noise hazardous areas with a change of duty, or hospitalization for complete evaluation and disposition.

All individuals employed in an area with noise levels in excess of 95 decibels are reexamined every 30 days. Suspected cases of malingering have been virtually eliminated by tape recorded programs which automatically, per second, change to a different cycle and decibel level, then return, and compare previous data. These taped programs are used with the 10-man testing booth. Many interesting cases were encountered and brief descriptions of selected patients who showed improvement when removed from the hazardous areas are presented.

In one pilot study of 2735 persons over a one-year period, including base and recheck audiograms, 1402 persons indicated varying degrees of hearing loss. Those cases deemed to be due to normal aging processes and who demonstrated no regression in auditory acuity between the two audiograms were eliminated for the purpose of this study. One hundred and twenty-nine military personnel were either transferred or released from active duty during this period. The core of the study is the remaining 609 cases.

Following indoctrination and "spot check" monitoring to assure that protective devices were being correctly utilized and safety factors observed, 317 persons sustained no further hearing loss. Audiograms of an additional

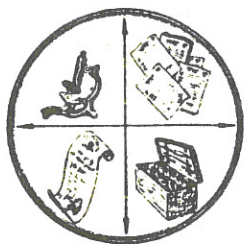
202 cases gradually returned to their base line figure over a period of from one to four months. All have been returned to full duty with monthly rechecks scheduled. Of the remaining 90 cases, 29 were given a permanent change in occupational specialty to prevent further hearing loss and are tested periodically on a continuing basis. The remaining 61 of the entire group were removed from their positions on a temporary basis on grounds of excessive loss, infectious processes, or for other causes. This group has been indoctrinated thoroughly in preventive measures and returned to their former duties subject to frequent audiometric retesting.

The program has certainly "paid off" in monetary savings, reduction in disability compensation cases, retention of valuable technicians, and of even greater importance, in the probable prevention of permanent acoustic damage in an impressive group of personnel.

Aircraft are being received which generate more than twice the sound levels of the present engines, i. e., F4H-Phantoms. Hearing conservation programs must be accelerated to keep abreast of technologic advances in order to maintain the peak efficiency of personnel and prevent further acoustic loss.

It is further concluded from the examination of IBM computations that certain patterns may be predicted. The IBM questionnaire is submitted in this article. Concentration of effort is primarily indicated where family history is negative and all other factors indicate that a loss of auditory acuity is attributable to high noise generators.

* * * * *



MISCELLANY

Major Flag Rank Changes and Citations at BuMed

Rear Admiral F. P. Gilmore MC USN, Assistant Chief of Bureau for Planning and Logistics, and Rear Admiral C. W. Schantz DC USN, Assistant Chief of Bureau for Dentistry and Chief, Dental Division, retired at 2400, 31 July. Rear Admiral C. D. Riggs MC USN assumed duties as Assistant Chief of Bureau for Planning and Logistics, with additional duty as Inspector General, Medical. Rear Admiral F. M. Kyes DC USN assumed duties as Assistant Chief of Bureau for Dentistry and Chief, Dental Division. Rear Admiral C. B. Galloway MC USN, Assistant Chief of Bureau for Research and Military Medical Specialties was detached from BuMed on 29 July. On 31 July, he assumed command of the National Naval Medical Center as the relief of Rear Admiral R. B. Brown MC USN. Rear Admiral Brown assumed duty at BuMed as Assistant Chief of the Bureau for Personnel and Professional Operations.

At a retirement ceremony in the office of the Surgeon General, Rear Admiral Edward C. Kenney MC USN, the Legion of Merit was awarded to Rear Admiral F. P. Gilmore MC USN and to Rear Admiral C. W. Schantz DC USN by the Honorable Fred Korth, Secretary of the Navy, for the President of the United States on 31 July 1963.

* * * * *

Caution on Waiver of Premiums on National
Service Life Insurance (NSLI)

From Information Service 065, Veterans Administration, Wash 25, D. C.

George L. Holland, Manager, Veterans Benefits Office, 21st and Constitution Ave., N. W., Washington, D. C., recently announced that servicemen with inservice waivers in force on their GI insurance premiums should learn what effect these waivers have on payments to their survivors; they may cancel the waivers if such action is indicated.

Inservice waivers have not been granted since January 1, 1957 when they were precluded by the Veterans Survivors Benefits Act, as pointed out by Mr. Holland. Continuance of waivers already in existence was permitted. Aware of this, many servicemen continued their inservice waivers without understanding the changed status of their dependents resulting from the provisions of the Act.

The Act established a new system of compensation for death due to service; this is known as Dependency and Indemnity Compensation (DIC). The provisions of DIC are, in general, more generous than the Death Compensation rates previously in effect. However, the law precludes payment of DIC benefits to survivors of servicemen who die with GI insurance in force under inservice waiver.

Generally, servicemen with wives and/or children may provide better for their survivors by canceling their inservice waivers and resume paying their GI insurance premiums. Before making a decision, however, each serviceman should consult his personal affairs or finance officer, Mr. Holland advised. Servicemen without dependents would usually not gain by discontinuing their inservice waivers until they marry.

NOTE: It is unfortunate, but true, that two senior officers of the Navy's Medical Department died within the recent past while their NSLI premium waivers were still in effect. This means that each widow will receive compensation of approximately \$70 per month instead of \$232 per month. This situation is all the more sad when one reflects on the minimal effort which would have been required to cancel the premium waivers and resume payment of premiums by allotment.

This item is based upon factual information submitted to the Medical News Letter by LCDR Milton E. Koepke MSC USN (Ret), Assistant Secretary-Treasurer, Navy Mutual Aid Assn, Navy Department, Washington 25, D. C.

Food for Thought
or
A Word to the Wise Is Sufficient

Surveys are designed to serve a useful purpose; if they yield disturbing findings, they may be a strong indication for remedial action. Anyhow, a discreet survey was made of all personnel in a Naval disaster who had dependents. Some results, comments, and recommendations are recorded as a well-meant service to readers:

	<u>Officers</u>	<u>Enlisted</u>
Range of insurance	\$0 to 45,000	\$0 to 35,000
Average amount of insurance	\$23,700	\$12,750
Percentage with no insurance	11%	22%
Percentage leaving wills	55%	1%
Percentage leaving valid wills	44%	1%

Troubles experienced by dependents are:

- I. One officer with wife and three children had not changed beneficiary from mother to wife. Widow and three children left with no insurance benefit and no will.
- II. One man failed to change beneficiary from parents to wife and children.
- III. Widow stated she was with husband when he changed beneficiary from parents to her for National Service Life Insurance, but parents received whole benefit since change was not recorded.
- IV. Will lacked a third witness and so was invalid in state where probated. Widow made guardian of all property but must appear in court before selling anything—even personal clothing.
- V. Widows with no wills: situation confused for officers and cloudy for enlisted men.

Recommendations made by widows are:

Officers:

1. All officers should carry Navy Mutual Aid and Armed Forces Relief and Benefit Association Insurance. (Both are non-profit and non-commercial, have extremely low premium rates for total coverage of \$25,000, are very strong financially, and are operated for and by service personnel.)
2. Husband should be urged (or required if possible) to make wife beneficiary of insurance soon after marriage.
3. Husbands should be urged (or required if possible) to make valid wills and keep them up-to-date.

Enlisted:

1. Urge (or require if possible) Navy men to carry insurance, make valid wills, and keep them up-to-date.

American Board CertificationsAmerican Board of Anesthesiology

LCDR Harold N. Dean MC USN

LCDR Thomas G. Doneker MC USN

LT Richard H. Norton MC USN

American Board of Dermatology

LCDR Fred R. Edens MC USN

American Board of Internal Medicine

CAPT Francis L. Giknis MC USN

(Subspecialty of Cardiovascular Disease)

LCDR Angelo A. Ciliberti MC USN

LCDR Hunter O. Cutting MC USNR (Active Duty)

LCDR John J. Stevens MC USN

American Board of Obstetrics and Gynecology

LCDR Thomas A. Daane MC USN

LCDR Harry R. Houston MC USN

LCDR Vern N. Walker MC USN

American Board of Ophthalmology

LCDR Hugh M. Morrison MC USNR (Active Duty)

American Board of Orthopaedic Surgery

CAPT Newman A. Hoopingarner MC USN

LCDR Duane L. Seig MC USN

American Board of Otolaryngology

LCDR Paul H. Nieberding MC USN

American Board of Pathology

CDR Robert M. Drake MC USN

LCDR Richard L. Davis MC USN

LCDR Walter D. Gable MC USN

LCDR Frank O. Raasch Jr, MC USN

LT Terence Beven MC USNR (Active Duty)

LT James J. Biemer MC USN

LT Howard T. DeHaven MC USNR (Active Duty)

LT James G. Harmeling MC USN

LT Arnold D. Hoekzema MC USN

American Board of Pediatrics

LCDR John P. Curran MC USN

LCDR James L. Hughes MC USN

LCDR David L. Lawrence MC USN

LCDR Alva L. Mayes Jr, MC USN

American Board of Radiology

LT Norman A. Thorne MC USNR (Active Duty)

American Board of Surgery

LCDR Leo R. Brown MC USN

LCDR Almon C. Wilson MC USN

Board of Thoracic Surgery

(Affiliate with the American Board of Surgery)

CDR Homer S. Arnold MC USN

CDR William A. Snyder MC USN

American Board of Urology

CAPT Richard B. Connor MC USN

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Freedoms Foundation Valley Forge Patriots' Award

Vice Admiral William R. Smedberg III, Chief of Naval Personnel, recently forwarded to Lieutenant Commander Lucien E. Barkley MSC USN the George Washington Honor Medal with the following comments:

It is gratifying to learn that your letter entitled "My Freedoms and My Responsibilities" has been selected for special recognition in the 14th Annual National and School Awards Program of the Freedoms Foundation at Valley Forge, Pennsylvania.

The outstanding manner in which you have expressed your concepts of freedom and responsibility is evidenced in an excerpt from your letter as published by the Freedoms Foundation in their official program:

"To be free one must assume the responsibility of freedom. To be responsible; not bound by dictum and rote, or limited by dogma, one must be free! My responsibility is to support my government, stand steady in my beliefs, respect authority and, within myself, have no fears."

Your successful competition with thousands of people from all the Armed Forces for the 1962 "Valley Forge Patriots' Award" has earned well-deserved recognition and reward. You have demonstrated a keen appreciation of our daily responsibility as Navy men in maintaining freedom through Seapower.

It is a privilege to forward an award that reflects so favorably upon the Navy as a whole, upon your Command, and upon you as an individual. A copy of this letter will be made part of your official record. Well done!

Rear Admiral Edward C. Kenney MC USN, Surgeon General, delivered Vice Admiral Smedberg's letter "with sincere congratulations on this important

achievement. It is a great honor and one you richly deserve. We in the Medical Department of the Navy are justly proud of your fine work and outstanding ability. "

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Captain Johnson Reports on Medical Problems
of Counter-Guerrilla Warfare

Camp H. M. Smith, Oahu, Hawaii, 15 July 1963. "Jungle warfare casualties will need a higher level of initial care," says a veteran Navy Doctor in a report prepared at Fleet Marine Force, Pacific, Headquarters. He is Captain Howard A. Johnson MC USN who returned on 6 July from one month of "on-the-spot" research into the medical aspects of counter-guerrilla warfare in South-east Asia. As the Force Surgeon of Headquarters, FMF PAC, he directs the efforts of 1850 doctors and medical personnel, serving more than 70,000 Marines attached to the Fleet Marine Force, Pacific.

The purpose of the research was to gain information that could be used to establish broad guidelines for future medical planning and training of personnel. Included in the tour were visits to Singapore, Malaya, Vietnam, and the jungle warfare schools at Jahore, Bahru, and Okinawa.

At each stop, interviews were held with troop leaders, counter-guerrilla warfare instructors, and United States and allied medical personnel. With emphasis being placed on counter-guerrilla warfare training in Fleet Marine Force commands today, it was realized that studies of the medical aspects of counter-guerrilla warfare should be intensified.

Doctor Johnson summed up the results of his research by saying that the care and evacuation of casualties will not change, only the methods. It is his opinion that the problems created by small units working in widely dispersed jungle areas (where the possibility of contamination and infection is higher and casualty evacuation more difficult) will require a higher level of care and treatment than is usually afforded in forward zones. Some of the areas proposed for planning and training include: communications for medical purposes, systems of resupply to forward units, raising the level of knowledge and understanding of military preventive medicine among all ranks, improving first aid proficiency of personnel in combat units, and advancing the technical and military knowledge and skill of Navy Medical Corpsmen attached to Marine units.

Doctor Johnson, a veteran of 22 years' service, is a graduate of Rutgers University and Jefferson Medical College where he received his Doctorate in 1931. More than 14 years of this service has been with the Marine Corps, including combat duty in World War II with the 4th Marine Division and the 1st Marine Division in Korea.

The Captain's son, Marine 1stLt Alford B. Johnson, is now serving with the 3d Marine Division on Okonawa.

—Official Release, Information Services Office FMF PAC

Forensic and Radiation Pathology
Training at the AFIP

The AFIP Continuing Education program has recently included two additions which were created for newly recognized pathology subspecialties in the military medical services. The first of these programs is an accredited one-year residency in Forensic Pathology and the second, a one-year fellowship in Radiation Pathology.

Because of the pressing and expanding importance of having increasing numbers of well trained pathologists in both of these specialties for military and civilian medicine, the Armed Forces Institute of Pathology has established these training programs. In both instances, the training is oriented to meet military needs in a manner not available elsewhere.

The successful completion of this one-year military residency program in Forensic Pathology qualifies the resident for application to take the Forensic Pathology examination of the American Board of Pathology. Nine months of the residency will involve training at the Armed Forces Institute of Pathology with part time participation with the Suburban Washington Medical Examiner, and training in skeletal identification to be conducted by the Division of Physical Anthropology of the Smithsonian Institution. In addition, during this 9-month assignment at AFIP, there will be opportunity for collaborative service in the Laboratories Division of the Federal Bureau of Investigation where emphasis will be on the technics for criminal investigation. The time the resident spends directly in the Armed Forces Institute of Pathology will be divided among the Military Environmental Pathology Branches, including aircraft accident investigation in the Aerospace Pathology Branch, Wound Ballistic Pathology, and consultation with the Legal Counsel of the AFIP concerning legal problems in medicine. Three months of the residency course will include full time assignment in the Baltimore office of the Chief Medical Examiner of Maryland where the resident can expect to participate in approximately one hundred forensic autopsies.

The Fellowship program in Radiation Pathology has been specifically prepared for pathologists of the military medical services. As the varying military and peaceful uses of ionizing substances increase, the demand for persons skilled in this specialty becomes acute. The Fellowship program will include three approximately equal training phases consisting of: (1) Study of morphologic changes due to radiation; (2) Instruction and experience in the use of radioisotopes; and (3) Study of a special project.

The morphologic studies will consist primarily of review of selected file material and tissue submitted to the Radiation Pathology Branch for diagnosis and consultation. In the training phase involving the use of radioisotopes, instruction will include instrumentation, assay, health, safety, and autoradiography. The special project study will be of the individual's personal choice involving some facet of radiation pathology and incorporating elements of experimental design of isotope usage and tissue change.

Military pathologists are encouraged to write for additional information to:
Colonel Joe M. Blumberg MC USA, Director, AFIP, Washington 25, D. C.

Correspondence Course - U. S. Naval Medical School

The Medical Department Correspondence Course, "Control of Communicable Diseases in Man," NAVPERS 10772-A, is now ready for distribution to eligible regular and reserve officer and enlisted personnel of the Armed Forces. Applications for this course should be submitted on Form NavPers 992 (with appropriate change in the "To" line), and forwarded via appropriate official channels to the Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda, Md., 20014.

This objective question course will acquaint the enrollee with the latest information on control of disease. For each disease discussed, information is provided on the clinical and laboratory findings, the etiologic agent, source of infection, mode of transmission, incubation period, period of communicability, susceptibility and resistance, and the prevalence of the disease. Venereal disease control is treated additionally. The course consists of six assignments based on "Control of Communicable Diseases in Man," 9th Edition, 1960, and the "Interviewer's Aid for VD Contact Investigation."

Naval Reserve retirement and/or promotion credit is evaluated at 12 points. These points are creditable only to personnel eligible to receive them under current directives governing retirement and/or promotion of Naval Reserve personnel. Persons who have completed NavPers 10772 will receive additional credit for completing this revision.

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Examination for Appointment of Cadets to United States Coast Guard

The U. S. Coast Guard has announced that the next annual competitive examination for appointment of cadets to the U. S. Coast Guard Academy in New London, Conn., will be held December 7, 1963 in more than 2000 cities in the United States and overseas. Applications are now being accepted.

Appointment to the Academy is obtained through competitive examination only; there are no Congressional appointments or State quotas. The four-year curriculum at the Academy leads to a Bachelor of Science Degree and the commission of Ensign in the United States Coast Guard. The examination is open to any unmarried qualified young man, military or civilian, who will have reached his 17th but not his 22nd birthday on July 1, 1964, and who is in good physical condition.

It is believed that Department of Defense personnel will know of men who would be interested in this examination, and that they will inform friends and relatives. Requests for information concerning the examination and requirements may be addressed to: Commandant (PTP-2), United States Coast Guard, Washington 25, D. C.—TIO BuMed Info Memo 14(6), 14 August 1963.

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Naval Medical Research ReportsU. S. Naval Medical Research Unit No. 3, Cairo, Egypt

1. Leishmaniasis in the Sudan Republic. Scientific Progress Report, January to June 1963: MR 005.09-1603.1, June 1963.

U. S. Naval Medical Field Research Laboratory, Camp Lejeune, N. C.

1. Comparison of Energy Expenditure when Carrying Different Weights with "Hip Pack" and Conventional Load-Carrying Systems: MR 005.12-7010.1.15, May 1963.
2. Effects of Wearing Body Armor of Different Designs, Materials, and Weights in Conjunction with Two Designs of Packs and Suspenders on the Performance of the Marine: MR 005.12-7010.1.16, May 1963.
3. Equipment Testing and Development Division: MR 005.12-6001.6, June '63.
4. Induced Removal of Embedded Amblyomma Americanum (L) Ticks: MR 005.09-0010.2.3, July 1963.
5. User Test of the Bowen Portable Turbojet High-Speed Dental Handpiece Unit, Improved: MR 005.12-6001.6, July 1963.
6. Regional Variations in Blood Lactate Concentrations: MR 005.01-0030.2.1, August 1963.

U. S. Naval Air Development Center, Aviation Medical Acceleration Laboratory, Johnsville, Penna.

1. Successive Differentiation of a Lever Displacement Response: MR 005.13-0002.16 Report No. 11, July 1963.

U. S. Naval Submarine Base, Naval Medical Research Laboratory, New London, Conn.

1. Lighting Survey of USS ANGLER (SS 240) MR 005.14-1100-1.11, Memorandum Report No. 63-5, April 1963.
2. Speech Intelligibility During Prolonged Exposure to Helium-Oxygen: MR 005.14-1001-4.02, May 1963.
3. Hyperbaric Oxygenation Bibliography Current to 1963: MR 005.14-3100-4.01, Memorandum Report No. 63-10, June 1963.

U. S. Naval Hospital, Navy Prosthetic Research Laboratory, Oakland 14, Calif.

1. New Concept in the Production of Orthopedic and Amputee Tracings: MR 005.12-0400 Subtask 3, June 1963.

U. S. Naval Aviation Medical Center, Naval School of Aviation Medicine, Pensacola, Fla.

1. Peer Rating Validity as a Function of Rater Intelligence and Rating Score Received: MR 005.13-5001 Subtask 1 Report No. 24, March 1963.
2. An Instrument for VCG and Scalar ECG Measurements: MR 005.13-7004 Subtask 2 Report No. 2, March 1963.

(Continued in an early issue)

FROM THE NOTE BOOK

Submarine Medicine

The Submarine Medicine Division takes great pleasure in announcing that the below listed medical officers have recently qualified and been designated as Submarine Medical Officers by the Chief of Naval Personnel:

LCDR A.H. Barsoum MC USN	LT M.M. Hoffer MC USNR
LT A. (N) Erde MC USN	LT G.J. Weir Jr, MC USN

In qualifying for this designation, these medical officers have completed Submarine Medicine and Diving Schools, served in an operational billet for a minimum of one year, prepared a professional paper suitable for publication on some phase of this military medical specialty, and passed a comprehensive written and oral examination conducted by the Central Board of Medical Officers for Qualification of Submarine Medical Officers.

This designation authorizes these medical officers to wear the coveted and distinctive submarine medicine insignia on their uniform, thus joining a small but highly respected group of Navy physicians.

Medical Service Corps Training Announcement

BUMED INSTRUCTION 1520. 12B requires that all MSC officers (2300, 2302, and 2305) who desire to be considered for assignment to duty under instruction at the Naval School of Hospital Administration, Bethesda, Md., must submit individual letter requests. Requests should contain a complete resume of academic background, including transcripts of courses completed unless they have previously been furnished the Bureau of Medicine and Surgery, plus other requirements of the above instruction. Requests for the NSHA class convening in August 1964 must reach the Bureau prior to 1 January 1964.

BUMED INSTRUCTION 1500. 7A outlines the current policy regarding part-time outservice training. In Fiscal Year 1963, more than 180 MSC officers participated in part-time outservice courses of instruction under BuMed sponsorship. Approximately 95% of these officers are serving in the ranks below Lieutenant Commander. A marked increase in part-time participation is anticipated in Fiscal Year 1964 as more MSC officers realize and take advantage of the educational opportunities available under the provisions of the above instruction.

Since the educational background of an officer is considered in making assignments, officers are encouraged to keep their records current by submitting academic transcripts of courses completed. This is equally important in cases where officers are participating in outservice training not under BuMed sponsorship. —MSC Div, BuMed

New Medical Emergency Symbol. The American Medical Association recently announced a new universal symbol which will tell anyone rendering emergency care to a person who is unconscious or otherwise unable to communicate that

its wearer has a special physical condition requiring particular attention. The symbol which may be displayed on a wristlet, an anklet, a medallion around the neck or elsewhere is a sign that there are vital medical facts on a personal health information card in the bearer's purse or wallet or on an alerting device.

The symbol is a hexagon shaped emblem containing a six-pointed figure, or sign of life. Superimposed on the figure is the insignia of the medical profession. It will be used by many individuals. Diabetic coma, for instance, sometimes makes its victims appear intoxicated, and treatment may be dangerously delayed. The symbol also could indicate allergies to antibiotics, such as penicillin, and many other physical problems.

For additional information on the symbol, write the Department of Health Education, American Medical Assn., 535 N. Dearborn St., Chicago 10 Illinois.

Residency Training Certificates. The present residency training certificates are under revision. For this reason, there will be some delay between the time a residency is completed and the time the certificate is received. It is expected that all certificates for residencies completed after 1 July 1963 will be forwarded to the individuals during October; thereafter the certificate will normally be presented upon completion of training.

—Training Branch, Professional Div., BuMed

BUMED INSTRUCTION 6120.3E. This refers to the item concerning this instruction which was printed in the Medical News Letter of 2 August 1963 on page 19. With more detailed information in the last sentence, this item is repeated below:

This instruction establishes procedures and reporting methods for conducting and processing formal physical examinations of candidates for admission to the U. S. Naval Academy. BUMED INSTRUCTION 6120.3D is canceled. The provisions of MANMED art 15-43 are unchanged insofar as preliminary physical examinations of candidates for the U. S. Naval Academy are concerned.

—PQ and MR Div, BuMed

The Foltz Lineage. Charles I. Foltz, great-grandson of former Surgeon General Jonathan Foltz (1871-1872), visited the Bureau of Medicine and Surgery on July 23 this year to discuss Training matters with CAPT S. D. Bond MC USN. Clinton Foltz, a great-uncle of Mr. Foltz, was Surgeon General of the Army at one time. There have been many members of the Foltz family who have served our country in the various military services.

Mr. Charles I. Foltz is District Manager (D. C.) of a commercial firm located at 1845 R St., N. W., Washington, D. C. —Reported by CAPT Bond

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DENTAL**SECTION**Roentgeno-Questions

Arthur H. Wuehrmann, editor of the Oral Roentgenology Section, American Academy of Oral Roentgenology, Oral Surg 16(6): 691-693, June 1963. *

Is there a method whereby an intraoral film can be positively identified on the film itself without detracting from its diagnostic value?

An embarrassing situation exists when processed dental x-ray films cannot be identified quickly and with absolute certainty. The prospect of becoming involved in the situation of reading the wrong film or of finding several x-ray films in the drying chamber with no identifying markers is untenable.

Many methods have been employed to identify processed film. Medical x-ray technicians tape metallic letters, symbols, numbers, or even the name of the patient on the extraoral plate to be exposed. This method, although practically foolproof is objectionable in dentistry. It is a time-consuming process, and the small metallic letters are easily lost.

Intraoral films pose a unique problem. Because of their small size, it is not feasible to fasten metallic letters or symbols on the film packet itself. However, there are many ways that single intraoral x-ray films may be identified in a dental practice. In the majority of cases, the name of the patient and the date are written on the film packet after exposure. The film is subsequently processed on one clip of a hanger and the paper from the packet is attached to another clip. Unfortunately, all too often the identifying paper is lost during the processing cycle.

It is the practice in some dental offices to write the name of the patient and the date on the film itself after the film has dried. In most offices, however, this additional precautionary measure is omitted; the film is merely placed in an appropriately identified envelope. All too often the film becomes separated from the envelope, and positive identification is then difficult if not impossible.

A complete-mouth roentgenographic survey rarely presents a problem; these films usually are inserted in a properly identified x-ray mount. However, if less than a complete set is to be processed, it is my practice to identify each packet immediately after exposure by printing the name of the patient and the date on the film packet in an area of minimal diagnostic importance. On packets of the anterior region, where the film is vertically positioned, the identifying data are placed on opposite sides, close to the periphery and parallel

to the apical-incisal axis of the teeth. Since posterior teeth are x-rayed in the horizontal position, the identifying data are placed on the mesiodistal aspects of the film packet. This principle of using the area of minimal diagnostic significance also holds true for bitewing registrations. When the packet is opened in the darkroom, the name of the patient and the date are printed on the film with a soft lead pencil in the same corresponding position as on the film packet. The film is now put through the processing cycle.

The identifying data, which have now become an integral part of the processed film may be readily distinguished when the film is held against a source of light at an oblique angle so that it is viewed by reflected rather than transmitted light. The fine lines occasioned by the lead pencil afford minimal interference with the film's diagnostic qualities. I have films that were so identified dating back as far as 1946. Some of the images have faded, but the data are still legible.

This simplified technique for positive identification of dental x-ray film is practically foolproof; it is permanent, rapid, and economical, and it may be readily incorporated into the normal routine of a busy dental practice.

*Submitted by B. D. Lynn, DDS

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Emergencies in the Dental Office

Leonard M. Monheim, Professor and Head of the Department of Anesthesiology, University of Pittsburgh School of Dentistry. Practical Dental Monographs, July 1963.

The following is a portion of the introduction to an outstanding presentation on emergencies confronting all dentists. The complete article is recommended for study and addition to the personal professional library by all dental officers.

The discussion of any topic should be justified. This applies particularly to the subject of emergencies, since they happen somewhat infrequently in dental practice. This is more or less as it should be, for if emergencies were to occur with alarming frequency, we would be justified in reviewing critically the status of our practice. Something about it would be amiss. However, as infrequent as emergencies may be, they are by no means rare. Just when they will occur and under what circumstances is impossible to predict or to prepare for. Therefore, every dentist should be cognizant of the possibility of an emergency occurring, and at all times be professionally and emotionally prepared to cope with the situation.

An emergency may be defined as "any unforeseen combination of circumstances requiring immediate attention." Not all emergencies are life-endangering, but when an element of doubt exists as to the final outcome without treatment, or a sense of urgency due to discomfort is present, we are justified in considering the condition as an emergency. In dental practice, a variety of instances may rightfully be considered emergencies. These may

actually range from the simplest—an aching tooth—to the most serious—cardiac arrest. The dentist may not, in all cases, be able to render the necessary complete treatment, but he should be able to safeguard the life and welfare of his patient until more experienced or more appropriate help is secured.

In emergency situations there is time neither to peruse the literature nor to gather together the necessary individuals and armamentarium. This simply means that the dentist in his office should have the necessary equipment readily available and in working order, and have himself and his staff professionally and emotionally oriented to handle even the most serious emergency without undue delay, since in serious cases unnecessary delay may mean the difference between success and failure.

It would be basically impossible to discuss all emergencies that could possibly happen, since, by their very nature, they are unpredictable in the various manners by which they could occur. On the other hand, as stated previously, the dentist should be able to handle competently any emergency that occurs; and it is reasonable to discuss in generalities, as well as specific detail, the emergencies most likely to occur and the various ways to manage them.

* * * * *

Personnel and Professional Notes

U. S. Navy Dental Corps Continuing Training Program. Recognizing the need for a continuing education program to keep Dental officers of the Navy abreast of the latest developments in dentistry and keyed to a high professional level, the U. S. Naval Dental Corps is offering a series of short postgraduate courses conducted by members of the staff of the U. S. Naval Dental School, Washington, D. C.

"Preventive Dentistry" will be offered 28 October - 1 November 1963. This course covers the various aspects of the prevention and early control of dental disease. It focuses attention on the methods of preventing one of the most prevalent of these diseases, dental caries. The causes, pathology, and incidence of the disease as well as practical methods for its control and prevention are presented. Capt G. H. Rovelstad DC USN will be the instructor.

"Operative Dentistry" will be offered 4-8 November 1963. In this course operative restorative procedures utilizing amalgam, gold foil, and gold inlays are described, illustrated, and demonstrated. These procedures include cavity preparation, irrigated field techniques, and material handling. Pulpal considerations are discussed. Attention is given to the advantages and disadvantages of various handpiece types and speeds, as well as to procurement procedures and to maintenance and care of instruments and equipment. Reference is made to caries prevention and control. Capt L. M. Armstrong DC USN will be the instructor.

Quotas for both courses have been assigned to ComOne, ComThree, ComFour, ComFive, ComSix, ComNine, PRNC, SRNC, CNATRA. These short courses are open to active duty career Dental officers of the Armed Forces in

accordance with these quotas established by the Bureau of Medicine and Surgery.

Applications should be received in the Bureau as early as possible and preferably, not less than 4 weeks prior to commencement of the course. The Bureau Professional Advisory Board will make recommendations on all requests, and upon approval by the Surgeon General, applicants will be notified as to the final action. Those approved will be nominated for TAD or authorization orders, as appropriate. Accounting data will be forwarded to individual officers nominated for TAD orders. Staff Dental Officers not utilizing assigned quotas should report this information to BUMED, Code 6111, one month prior to the convening date of the course. This will allow the Bureau to fill the quota from other districts.

Notice to All Users of Midwest Air Turbines. The Midwest Dental Manufacturing Company, 1980 N. Hawthorn, Melrose Park, Illinois, has made available to the Navy a replacement rotor cartridge for use in their model 432-2L Contra-angle handpiece, which utilizes latch type burs. In those cases where malfunction of the handpiece is due to bearing failure, this kit will enable replacement of the rotor assembly in the dental office rather than returning the handpiece to the factory for repair. Rotors and tools can be procured, Open Purchase, direct from Midwest Dental Manufacturing Company.

Items required to effect rotor assembly change and prices, Government Net, are as follows:

<u>Item</u>	<u>Price</u>
T14-Push-out rod for #2L Contra-angle	2.50 ea.
T42-Wrench for #2L Contra-angle	2.50 ea.
937XX-Turbine Cartridge	33.00 ea.

In the event the cause of handpiece mal-function is unknown, or more extensive repair required, return the handpiece to the factory utilizing provisions of Contract #DSA2-4144 and modifications 1 and 2 thereto. In this connection, it is noted that Midwest does not recommend the addition of the new metal chuck to the 432-2L Contra-angle, since they have found the latch-type bur to be harmful to a metal chuck.

During factory repair of 3S and 4M contra-angles where the rotor is rebuilt and bearings replaced, under the provisions of the above mentioned contract, the new metal chuck will be added at no cost.

Please make the following statement on each order for factory rebuilding of rotors.

"It is requested that each rebuilt rotor be tested for accepted speed tolerances before returning to this activity."

Announcement of New Slide Study Set. The U. S. Naval Dental School, NNMC, Bethesda, Md., announces that a new Oral Pathology study set, Benign and Malignant Oral Tumors, is available on a short-term loan basis. The set consists of 25 microscopic slides prepared from specimens received in the Pathology Division of the Dental School and a 73-page syllabus.

The syllabus is divided into two sections. In Section I are the clinical notes that accompanied each specimen when it was submitted for diagnosis. In Section II are the histologic description, diagnosis, and pertinent remarks for each case. The syllabus was prepared in this manner to encourage the user of the set to make his own written description and diagnosis before referring to the histologic description and diagnosis in Section II.

The new study set is the second of this type prepared by the U. S. Naval Dental School. The first set, Non-Neoplastic Oral Lesions, (announced in Vol. 30, No. 6, Medical News Letter) is available for loan also. Request to borrow these sets should be made through use of the form below.

From: _____
(name, rank, full address)
To: Commanding Officer, U. S. Naval Dental School (Code C-12)
National Naval Medical Center
Bethesda, Maryland 20014

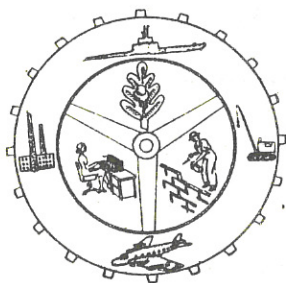
Subj: Oral Pathology microscopic slide set; request for loan of

1. I request the loan of the oral pathology microscopic slide set
_____ for approximately two weeks.
2. It is requested that the period of the loan commence on or about
_____ 196_, to expire not later than two weeks from the
date of receipt.
3. I will exercise due care in handling and stowing this training material and will return it in the original carton at the expiration of the loan period, using the franked address labels that are provided.

(signature)

Graduation Exercises at U. S. Naval Dental School. Graduation exercises were held on 28 June 1963, for 28 postgraduate and six resident Dental officers of the U. S. Naval Dental School, NNMC, Bethesda, Md. The ceremonies were presided over by Capt A. R. Frechette DC USN, Commanding Officer of the School. The main address was delivered by Congressman John E. Fogarty of Rhode Island. He pointed out the existing shortage of dentists in the United States and the responsibility to encourage and influence capable young men to enter the profession.

Diplomas were presented to the graduates by RAdm Frank M. Kyes DC USN, Chief, Dental Division, Bureau of Medicine and Surgery, assisted by Capt G. W. Ferguson DC USN, Head, Officer Education and Training Department of the U. S. Naval Dental School. The Commanding Officer's award for excellence in Operative Dentistry was presented to LCdr T. M. Allensworth DC USN.



OCCUPATIONAL MEDICINE

Asphyxiant Gas Accident in Ballast Tank of Ship

Submitted by Salvatore DiLustro, Industrial Hygienist, U. S. Naval Air Station, Quonset Point, R.I., for the Occupational Health Quarterly Release.

An industrial hygiene survey was conducted on board an icebreaker as a result of a health hazard in which 3 officers were overcome in a ballast tank which had not been ventilated during the course of inspecting structures in the tank.

One of the inspecting officers was found unconscious in the tank. Two officers going in the tank to pull him out were also overcome but recovered shortly thereafter. Enlisted personnel using oxygen breathing apparatus finally rescued the inspecting officer who was hoisted above in a stretcher. He was seriously affected, hospitalized and subsequently released.

Approximately 6 hours after the incident, the following tests were carried out after receiving a report that a combustible gas was present containing 4.0 percent carbon dioxide and 0.05 percent carbon monoxide:

- (1) Unidentifiable combustible gas present - concentration of 20 percent of the lower explosive limit.
- (2) Deficiency of oxygen present - below 16.00 percent.
- (3) Carbon monoxide present - trace, below 0.001 percent.
- (4) The following day the oxygen content was determined at 9.0 percent.

Atmospheric "grab" samples in the tank were taken and a laboratory analysis using the infrared spectrophotometer revealed a heavy concentration of methane and carbon dioxide.

(5) The results of the survey revealed a health hazard present, with a potential fire hazard from the exposure to the combustible methane gas. A health hazard was found because of the extreme lack of oxygen present, due to the absorption from carbon dioxide and methane gas presumably being liberated from the decay of biological muck (sludge sediment found in tank).

(6) Carbon dioxide and methane are classified as simple asphyxiant gases and their toxicology as found in the "Handbook of Dangerous Materials" by N. Irving Sax, is hereby presented:

Toxicology of Simple Asphyxiant Gases

Gases of this type have no specific toxic effect, but they act by excluding oxygen from the lungs. The effect of simple asphyxiant gases is proportional

to the extent to which they diminish the amount (partial pressure) of oxygen in the air that is breathed. The oxygen may be diminished to two-thirds of its normal (20.8 percent) percentage in air before appreciable symptoms develop and this, in turn, requires the presence of a simple asphyxiant in a concentration of 33 percent in the mixture of air and gas. When the simple asphyxiant reaches a concentration of 50 percent, marked symptoms can be produced. A concentration of 75 percent is fatal in a matter of minutes.

The first symptoms produced by simple asphyxiant gases, such as carbon dioxide and methane, are rapid respirations and air hunger. Mental alertness is diminished and muscular co-ordination is impaired. Later, judgment becomes faulty and all sensations are depressed. Emotional instability often results and fatigue occurs rapidly. As the asphyxia progresses, there may be nausea and vomiting, prostration and loss of consciousness, and finally, convulsions, deep coma and death.

* * * * *

Treatment of Psychological Factors of Emotional Problems

S. Bernard Wortis, M.D., Dean, New York University School of Medicine, New York City. *Industr Med Surg* 32(5):182-183, May 1963.

The author feels that the treatment of the psychological factors of emotional problems of executives is a challenging problem that is not much different from the treatment of an ordinary person, with a few modifications to compensate for the fact that executives are more intensified in all their reactions. They have to be careful of what they exhibit to people with whom they work. The executive has a concept of his role, and has a status symbol to maintain in his organization.

This is further complicated by the present-day pressures on executives; in our changing society which is more dynamic, the executive has a board of directors on one side, and he has the worker and the labor union on the other side, which complicate the pressure on him as compared to years ago.

Many emotional problems of executives, I am sure, are frequently smoldered and suppressed, remaining unrecognized for periods of time, and, as it has been pointed out, it is perhaps the job of the physician to keep the executive at the level of his maximal capacity. Don't push him upstairs, try not to make him feel he is being pushed downstairs.

The problems of mergers have been given attention, since they relate to the executive. It appears that the problem of the treatment of these executives, therefore, can possibly be simplified for the industrial physician along these lines.

First, what is his job? As it has been pointed out, there are problems specific to the job, there are problems that are not specific to the job, and

then there are personal problems. It is obvious that the psychiatrist, or the industrial physician, has the task of getting this executive, if he is disturbed, to modify his own behavior, to modify the environmental stresses around him, or to modify his reaction to the behavior of others — or, a combination of all of these.

In considering the problems of the executive in industry, the physician must recognize that there are, first, natural processes in the organism that are a potent ally of the therapist. Don't be scared. Second, the psychotherapist must take into account the ways in which the patient has in the past used his own natural repair processes, because it is likely that if you use these channels, treatment will be more effective and more direct, and a cure will be more quickly achieved. Third, therapy of any kind—psychotherapy certainly today—must take cognizance of the dynamic factors, and the therapy must take into account the best available, immediately mobilizable, defense mental mechanisms that can be used to allay the anxieties of the executive. Fourth, the therapist is responsible for directing the patient's resources into channels that will give him understanding, and put order in place of chaos in the patient's mind.

What are some of the factors that must be remembered specifically by the physician who is trying to handle this?

First, he must remember in treating any patient, executives included, that the rapport he has with this patient—transference—is the vital tool in all psychotherapy. Second, the physician in this relationship is in a position of great authority. Third, psychotherapy need not be mysterious or very complicated. It can be simple and direct. Fourth, it is wise for the physician who is going to use this tool, or these tools, not to become addicted to any one or two forms of minor psychotherapy. Fifth, psychotherapy is entirely compatible with the use of other methods of medical treatment.

Sixth, it is important to remember that in this particular situation, you treat the person and you don't treat the symptoms. Seventh, don't be too grim and serious in psychotherapy. Humor is very helpful. Eighth, be careful to do a physical, a comprehensive one, on every patient. These are general rules that every physician should follow in handling executives.

Management of Psychotherapy

The management of psychotherapy should not include unnecessary manipulations. This is a very good rule. Remember that just as there are minor and major forms of surgery, there are minor and major forms of psychotherapy. Some common rules here are very useful for the industrial physician. Comprehensive physical examinations to start with, putting a patient on a schedule of common sense everyday living, is very helpful. Use drugs judiciously and as sparingly as possible. Give the patient, or the executive, a chance to talk. This is most important, because every interview a patient has with his physician has an effect whether for good or for bad, depending largely on how the physician handles it.

Don't be afraid of psychotherapy. Be confident in handling these executives; every interview must bring a conclusion. Don't leave loose ends with interviews on a continuing psychotherapeutic basis. If you do, it is a sign that you are not keeping track of what is going on, or you are being diverted and not paying attention to the problem. Every time a patient comes to your office, he should leave with some clear concept of what is happening at the time he leaves, and this should be clear to you as the therapist, so that you can communicate this concept to him.

There are minor and major forms of psychotherapy, and the minor forms should be done, and they can be done, by a scientific and alert general practitioner. He can do much in this field. But he will probably be out of his depth if he tries to do major psychotherapy.

Major psychotherapy requires special and adequate training in an atmosphere of leisure. This atmosphere is required for minor psychotherapy as well. When you are dealing with a patient in your office, don't clip your nails, don't read your mail, don't be diverted by other things, because these people are extremely sensitive to every little act you are involved in when they are in your office. Don't act shocked by what you hear. I think the emotions show your interest, sympathy and compassion. Don't say "Tsk, tsk" when he says something that seems awful.

If the general practitioner, or the industrial physician is going to refer a patient to a specialist, he must spend a fair amount of time in the proper preparation of his patient for psychiatric care. If he does not do this, he misses a great opportunity for this executive to get the proper kind of help.

Time is essential in handling these people, and a pat on the back is not a substitute for psychotherapy. The industrial physician can use a variety of techniques. Very often a change of pace for an executive, sending him off on a vacation, is a useful thing to do; or changing his pace of operation even to half a day at his office, where the pressures are great, is helpful. Remember, assurance is useful, hydrotherapy is useful; so is occupational therapy, the establishment of a daily routine; and, one should not sneer at an authoritative firmness, which I think, physicians should use—and often do without knowing it. It is wise to provide an acceptable outlet for much of the energy these executives have, if they are having trouble in the outlet of their work. Also, there are opportunities for certain techniques, if the therapist is sensitive enough to know what they mean and what they entail. Certain of these techniques, as a form of psychotherapy, require more psychiatric and psychological insights, and the average physician tends to be somewhat uneasy with these techniques unless he has had some training or some exposures to them. These cannot be done quickly; they do take time.

The special techniques, that become available when the individual has had adequate and prolonged training, provide psychotherapeutic handling at a deeper level. These, as you know, include hypnosis, psychoanalysis, modified psychoanalytic techniques which are most often used today, and group psychotherapy. All these methods of therapy are useful and effective. The percentage of good results that have been achieved in any group of patients

seems to be about the same, from experience, no matter what method was used, and therefore, it behooves one in handling his patients to employ those techniques in which he has the greatest confidence and security.

The author believes that if someone were to look, by and large, at the problems of the executive today, he could ask, "What is your main job as the industrial physician?" It seems to me that the most important thing for an executive to know is what the stresses are that he cannot take. He must learn what they are and how best to handle them. This implies some knowledge of the dynamics of the executive's behavior, and that is an area in medical education, in postgraduate years.

The therapist must also deal with an executive when he is slowing down or when he is retired; he must be taught some way of converting stress to zest which will carry him along for his retirement years.

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Findings on Marine Organisms at Pearl Harbor Naval Shipyard

Elizabeth Steffee, Industrial Hygienist, Pearl Harbor Naval Shipyard.
Quarterly Occupational Health Report, Jan-Mar 1963.

Marine Organisms Stinging Divers' Hands. About five years ago divers were called into the project of cleaning the seaward side of Power Plant #3 sea water tunnel. Upon completion of underwater tunnel cleaning, the hands and wrists of the divers were quite sore and red because of (1) "bites" from marine organisms or (2) chlorine from chlorination of the water. Thus it was recommended that they use a barrier cream in their next operation. Recently this operation was repeated. This time the divers coated their hands with a thick barrier cream and pulled on a pair of rubber gloves. Three divers were involved in the operation, and one had very red swollen hands upon completion of the job, while the other two were not so badly affected. All three divers agreed that the barrier cream was better than using nothing at all. It is thus certain that chlorine is not the cause of the irritation since the water has not been chlorinated for three years. In view of these results, a member of the industrial hygiene staff, who referred to previous experiences, mentioned the use of wrist seals which would almost completely keep water away from the hands. The principle was explained in a memo to the divers, and it was recommended that these seals be given a trial during the next underwater cleaning operation.

These marine organisms have been tentatively identified by the U. S. Fish & Wildlife Service as coelenterata which belong to the Class Hydrozoa (or Hydroids). They are quite common, very fragile, and when the divers stir them up, the nematocysts (or stinging colonies of cells) become water-borne to be dispersed by the currents. These cause the stinging sensation to the hands of the divers. They will be definitely classified for us by the Bureau of Commercial Fisheries from specimens in the next tunnel cleaning operation.

Sea-Water Tunnel, Hydrogen Sulfide from Marine Growth. During a recent job involving the cleaning of a sea-water tunnel for power plant #3, it was thought desirable to determine the H_2S levels resulting from decomposition of marine growth. After the tunnel was emptied, the levels were determined as was the air velocity in the tunnel. The highest level was 2 ppm and the air velocity was never under 150 lfpm, thus assuring over 5000 CFM.

On the following day, the organic marine growth which the workers were cleaning from the tunnel had decomposed more and the H_2S levels thus went up but were still below the allowable amount of 20 ppm. The highest value found was 5 ppm, and this was in the end of the tunnel closest to the sea where the growth had not yet been cleared out. Compressed air operated venturi blowers had also been added to the existing suckers and blowers, and the ventilation rate was thus greatly increased. All in all, the project ran very smoothly, and no dangerous H_2S levels were ever noted. Ventilation was more than adequate.

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Findings on Marine Organisms at Pearl Harbor Welding Burns

D. J. Bessmer, Industrial Hygienist, Puget Sound Naval Shipyard. Quarterly Occupational Health Report, Jan-Mar 1963.

Investigation of a dispensary admission revealed that personnel using electrical stud shooters often received hand and arm burns from falling sparks, particularly when the shooter is used in an overhead position. Gloves are generally not worn due to loss in dexterity. An examination of medical records shows that the welding shop had 43 dispensary admissions for such burns from 3 July 1962 through 30 January 1963, and that 16 of these cases could be attributed to burns sustained while using a stud shooter. On-the-job interviews of stud shooters indicate that the burns are often treated on the job or at home without reporting to the dispensary. An experimental leather cover for the stud shooter was recommended. Such a cover is simple, cheap, and could be quickly attached to or detached from the stud shooter.

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Mercury Poisoning

National Clearinghouse for Poison Control Centers, U. S. , DHEW, Public Health Service, Washington 25, D. C. , May-June 1963.

The National Clearinghouse for Poison Control Centers would like to call attention to an article in the March 1963 issue of the Journal of Occupational Medicine. This article presents two new cases of mercury poisoning, along with a rather interesting introduction which relates the many different situations causing mercury intoxications. It points out that acute poisonings have

occurred from the ingestion of soluble mercury compounds as well as when these products are used as a douche or antiseptic, or in the treatment of syphilis. Therapeutic misadventures with mercurial compounds have included chronic toxicity due to mercurial diuretics, the dermal application of mercury-containing ointments, and the topical application of merthiolate for the treatment of oral thrush, as described in the preceding Bulletin.

The inhalation of mercury vapors, a more insidious form of intoxication, has been described from many sources. Mercury-vapor poisonings that occur in industrial situations have left little mystery as to the source of the intoxicating agent. However, in other situations, serious injury and death have been the result of ignorance of this type of poisoning. In one recent incident, a gas heater was painted with a mercury-containing paint and caused death in two children and serious illness in the mother and another child when the heater was lit.

Two cases resulted from fumes emitted when the contents of hearing-aid batteries were heated to abstract the mercury. However, mercury does not have to be heated to cause toxicity. This is illustrated by the case, described in the March-April 1963 Bulletin, in which a child suffered poisoning from the sublimation of metallic mercury which had been dispersed in a rug in the child's bedroom.

The scope of occupations in which mercury is a hazard is large. Although workers in the felt hat industry are no longer affected, it is a problem to the farmer who handles seeds on which mercury has been used as a disinfectant, and to the dentist who habitually mixes amalgam in the palm of his hand. Other occupations which have potential for producing mercury poisoning are listed as follows: acetone makers (synthetic), induction-furnace workers, mercury-boiler workers, disinfectant makers, mercury-salt workers, photographic workers, thermometer workers, mercury-pump workers, arc-rectifier makers, mercury-vapor lamp makers, manometer makers, mercury solderers, laboratory workers, mercury smelters, barometer makers, fulminate makers, tannery workers, amalgam makers, acetaldehyde makers, electroplaters, gilders, metal refiners, bronzers, calico printers, dye makers, lithographers, color makers, fur handlers, fur preparers, mercury miners, and mirror silverers.

We are grateful to Dr. Leonard G. Goldwater, Professor of Occupational Medicine, Columbia University, for up-dating the above list which had been originally prepared by the Kentucky State Department of Health.

Dr. Goldwater pointed out, however, that there are many little-suspected sources of exposure to mercury in the home. Some that he called to our attention were contraceptives, hair lotions, filters in air conditioners, paints, dry-cell batteries, pharmaceuticals, rinses for bed linens and diapers, as well as insecticides and herbicides.

Dr. Goldwater's own studies have indicated that there are differences in toxicity among the various mercury compounds. Emphasizing that all organic compounds of mercury should not be lumped together in discussions of toxicity, he points out his personal convictions that the phenyl mercurials are less dangerous than the alkyls.

Mercury is absorbed through ingestion, through inhalation, or percutaneously. The mercury is then oxidized into soluble compounds and combines with the sulfhydryl groups of intracellular proteins in the tissues. Although a large portion of the absorbed mercury is excreted through the urine, feces, sweat, and saliva, that which remains produces a cumulative effect.

The clinical appearance of mercury poisoning varies not only with the type of the compound, but also with the nature of the contact. In acute poisoning with soluble mercurial salts, there is a markedly corrosive action on the mucosa of the gastrointestinal tract. Within a few minutes after exposure, the patient develops symptoms of acute gastrointestinal inflammation with violent pain, and vomiting of blood-stained material. There are tenesmus, purging, and bloody stools. The clinical appearance is that of a hemorrhagic gastritis and colitis with continuous or intermittent suppression of urine, uremia, and collapse. The patient may die within a few hours from peripheral vascular collapse, secondary to fluid and electrolyte losses.

If the victim survives this acute phase of mercury-salt poisoning, the second phase entered is characterized by stomatitis, gastritis, colitis, and severe renal tubular degeneration. This is true regardless of the route of intoxication, and (if ingested) whether the mercurial was corrosive or not.

In chronic mercury poisoning, the manifestations of the disease may appear relatively acutely. There may be vaso-motor disturbances in the skin with inflammatory reactions, eczema, petechial hemorrhages, excessive perspiration, desquamation of the skin, and dystrophy of the fingernails. Gastrointestinal symptoms are characterized by either increase in or lack of appetite, foul breath, salivation, metallic taste, gingivitis, stomatitis, vomiting, and diarrhea. The gingiva may be spongy and ulcerated, with the teeth discolored, fragile and loose. Nervous-system symptoms include irritability, mental hyperactivity, insomnia, anxiety, easy fatigability, slowed mentation, forgetfulness, timidity, loss of memory and childishness. Neuromuscular disturbances include fine intention tremors starting in the fingers and extending to arms and legs, later becoming jerky movements of the limbs, the head, and the trunk. Along with loss of coordination, the gait is unsteady and staggering, the deep reflexes become exaggerated, and there may be patella and achilles clonus. Death is usually the result of complete renal failure.

Treatment of acute mercurial poisoning should be directed toward the expedient removal of the offending substance. If a corrosive soluble salt has been ingested, consideration should be given to the administration of raw eggs or milk to precipitate the mercury, or possibly activated charcoal to adsorb it, followed by gastric lavage. In each case, the physician must weigh the dangers of the systemic toxicity against the time required to prevent further local corrosive action. BAL (dimercaprol) is used to chelate the absorbed mercury ion, whether it be acute or chronic poisoning. The dosage schedule suggested by Clinical Toxicology of Commercial Products is given on the next page.

The treatment of shock, dehydration, electrolyte imbalance, and renal insufficiency should be according to accepted medical standards.

DOSAGE SCHEDULE

	Severe Metal Poisoning	Mild Metal Poisoning
1st day	3.0 mg/kg q4h (6 inj.)	2.5 mg/kg q4h (6 inj.)
2nd day	3.0 mg/kg q4h (6 inj.)	2.5 mg/kg q6h (4 inj.)
3rd day	3.0 mg/kg q6h (4 inj.)	2.5 mg/kg q12h (2 inj.)
Each of the following 10 days (or until recovery)	3.0 mg/kg q12h (2 inj.)	2.5 mg/kg qd (1 inj.)

* * * * *

1, 1 Dimethylhydrazine (CH₃)₂ NNH₂
(Unsymmetrical Dimethylhydrazine UDMH)

Amer Industr Hyg Ass J, Dohrman H. Byers, Editor; 24(2):196-198, Mar-Apr 1963.

Significant Properties

Molecular weight:	60.08
Specific gravity:	0.784
Boiling point:	63.3° C at 760 mm Hg
Melting point:	-57.2° C
Vapor pressure:	157 mm Hg at 25° C
Odor threshold:	Unknown, but probably below 10 ppm
Solubility:	Miscible with water, ethanol, most petroleum fuels
At 25° C and 760 mm Hg:	Relative density of saturated air: 1.22 (air = 1.0)
	1 ppm = 0.00246 mg/liter
	1 mg/liter = 406 ppm
	Saturated air = 207,000 ppm (20.7% v/v)

Hygienic Standards

A. Recommended Maximum Atmospheric Concentration (8 hours): 0.5 part per million parts of air, by volume (ppm). Basis for Recommendation: Toxicological observations on animals.

B. Severity of Hazards: Health - High, on either acute or chronic exposures. Absorbable through skin, and causes skin irritation. Dogs repeatedly exposed for 13 weeks at 25 ppm had ataxia, convulsions, and anemia; dogs

repeatedly exposed for 26 weeks at 5 ppm lost weight and had a mild anemia. Minimal symptoms of exposure: upper respiratory irritation and muscle tremors. Acute symptoms: excitement, tremors, and convulsions. The liquid is irritant to eyes. Fire - High. Flash point (closed cup): 1°C (34°F). Flammability limits (or explosive limits) in air in the range of temperatures from -14°C to 62°C (7°F to 143°F): 2.5% to 95% by volume. Autoignition temperature: 235°C (454°F). Reacts exothermically and violently with nitrogen tetroxide, nitric acid, and some other oxidizing agents.

C. Short Exposure Tolerance: Emergency Tolerance Limits for several periods of exposure have been recommended: for 60 minutes, 10 ppm; for 30 minutes, 20 ppm; for 15 minutes, 35 ppm; and for 5 minutes, 50 ppm. Basis for recommendation: Toxicological observations on animals.

D. Atmospheric Concentrations Immediately Hazardous to Life: Unknown, but the following concentrations killed 50% of the experimental animals at the stated exposure times: 60 minutes, 1410 ppm for rats and 980 ppm for dogs; 30 minutes, 4010 ppm for rats; 15 minutes, 8230 ppm for rats and 3580 ppm for dogs; and 5 minutes, 24,460 ppm for rats and 22,300 ppm for dogs.

Industrial Hygiene Practice

A. Recognition: Odor - Its odor is apparent at low concentrations, but is not normally an adequate index of the hazard. The odor is usually described as amine-like (Fishy) or ammoniacal. Use - It is used as a fuel, normally as a component in a mixture, in rocket propulsion.

B. Evaluation of Exposure: Instrumentation - There are several commercially available detectors, but their reliability has not been reported. Chemical - A number of principles can be used in quantitative detection of dimethylhydrazine. Collection of vapors in aqueous solutions and titrimetric determination with potassium iodate or colorimetric determination by a molybdenum blue method have been shown to be useful.

C. Recommended Control Procedures: Enclose all processes and provide suitable ventilation. Use rubber protective clothing and eye protective devices. Suitable respiratory protection should be used or readily available; respirators with canisters designed to protect against ammonia should be useful for brief exposure at low to moderate concentrations, otherwise supplied-air respirators should be used.

Avoid contact between dimethylhydrazine and oxidizing agents and organic materials like sawdust, excelsior, cotton waste, etc., which might cause fire. Do not store in copper or in alloys high in copper content. Provide inert nitrogen blanket above dimethylhydrazine in closed containers.

Provide emergency showers and eye baths in work areas.

Specific Procedures

First Aid: Remove exposed persons from contaminated atmosphere. If the liquid contacts the skin or the eyes, wash thoroughly with large amounts of water; remove contaminated clothes immediately. Consult a physician.

Biochemical Assay: Blood or urinary determinations of the compound may be useful in verifying exposure; these can be performed by the method of Pinkerton et al.

Specific Medical Procedures: Convulsive activity may be controlled by use of quick-acting barbiturates or mephenesin, with appropriate preparations for possible synergistic depression of respiration. Pyridoxine hydrochloride has been found useful in antagonizing some of the effects of dimethylhydrazine poisoning in animals, but has not been tried in humans. Burns should be treated as chemical (alkali) burns.

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Pyridoxine Therapy
for Acute UDMH Intoxication

Industrial Hygiene News Report, published by Flournoy & Associates, 1791 Howard Street, Chicago 26, Illinois. Volume VI(5):3, May 1963.

Because of its large scale use as a missile propellant, the potentially toxic agent 1,1-dimethylhydrazine (UDMH) has become of increasing interest. Animal studies which present the basis for suggested emergency treatment of severely exposed personnel were described in a paper by Kenneth C. Back, PhD; Mildred K. Pinkerton, M. T.; and Anthony A. Thomas, M.D. (Wright-Patterson Air Force Base, Ohio) given at the Aerospace Medical Association's 34th annual meeting in Los Angeles, 29 April - 2 May.

UDMH was described as primarily a central nervous system irritant, which latently causes cardiovascular collapse and ensuing irreversible shock. Animals were not protected from lethal doses of UDMH by symptomatic treatment consisting of a combination of sedatives, anticonvulsants, neuromuscular blocking agents, cardiac glycosides, potent vasoconstrictors, artificial respiration, and plasma expanders. The authors reported, however, that pyridoxine therapy constitutes the first successful approach to specific treatment which prevents convulsions and death in all species tested. The ED 50 (effective dose) of two Vitamin B₆ congeners, pyridoxine hydrochloride and pyridoxamine dihydrochloride were determined in mice, rats, dogs and monkeys, and the only manifestation which was not abolished by this therapy in dogs and monkeys was vomiting.

* * * * *

Ambulance attendants in Pennsylvania are offered a 50-hour course in emergency care by the State health department through the environmental safety representative in each regional office. Training is provided through county medical societies, the American Red Cross, and the Pennsylvania State Police. Sessions cover first aid, the use of oxygen and other ambulance equipment, and emergency vehicle operation. The course is also open to policemen, firemen, nurses, rescue squads, and civil defense workers, space permitting.

(U. S. DHEW, PHS, Public Health Reports 78(6):550, June 1963.)

RESERVE



SECTION

Navy Ensign, 1915 Medical Program

The terms "Military Medicine" and "Civilian Medicine" no longer represent widely separated spheres of professional endeavor. Both are conducting clinical and laboratory research of inestimable value to the future health and welfare of our country. Similarly, their cooperation and well-coordinated efforts are responsible for greatly improved methods of caring for mass casualties resulting either from civil disaster or modern warfare.

The Ensign Medical Program was evolved to permit the affiliation of medical students with the Naval service at an early stage in their careers, thus enabling them to benefit by this broader concept of the role of today's medical profession.

I firmly believe that you will find this program well worth your careful consideration and that the opportunities, privileges and benefits of participation in the Ensign Medical Program will be of vital interest to you.

s/ E. C. KENNEY
Rear Admiral, MC,
Surgeon General, U. S. Navy

FOREWORD

After passage of the Selective Service Act of 1940, many medical students who were obligated for military service by the Act, indicated their desire to affiliate with the Naval Reserve in order to assure that their period of active duty would be with the Navy's Medical Department. To make this possible and to provide deferment from active duty until graduation, the Ensign, Probationary (Medical) Program was established before the onset of World War II. The first appointments late in 1941 were limited to third and fourth year medical students attending class "A" medical schools. Within a few months, however, the program was expanded to include first and second year medical students, and it has since come to be known as the "Ensign, 1915 Program."

The number "1915" is a designator used within the Department of the Navy to identify officers by a code system. The first three digits—191 indicate that the

officer is under instruction in a medical school; the last digit—5 indicates an officer of the Naval Reserve. Thus, 1915 refers to an officer of the Naval Reserve under instruction in an accredited medical school.

The primary objectives of this program are to provide (1) an opportunity for qualified medical students to affiliate with the Naval Reserve as commissioned officers while still in medical school; (2) assurance that these officers will be able to complete their medical studies and internship prior to fulfilling their obligation for active military duty; (3) assurance that when they do enter service it will be with the Navy's Medical Department; and (4) a primary source of qualified candidates for the Naval Intern Program and for the Medical Corps of the Navy and Naval Reserve. (to be continued)

NOTE: The attention of Reserve Medical Officers is invited to the Correspondence Course article on page 18 of this issue of the Medical News Letter.

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Active Duty for Training — "A Med"

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The following article was submitted by the Commanding Officer, "A" Company, 4th Medical Battalion, 4th MarDiv, FMF, USMCR, Washington Navy Yard Annex, U. S. Naval Station, Washington, D. C.

"A" Company, 4th Medical Battalion, 4th MarDiv, FMF, USMCR, is a reserve unit composed of Medical Department officers and corpsmen, as well as enlisted marines. In the summer of 1962 the company had its first unit training duty in Puerto Rico, and in 1963 the company went to Little Creek, Virginia for Amphibious Training.

In its 1963 active duty for training "A Med" as it is called, provided medical support to Marine units participating in field problems.

Members of the company sharpened their individual advancement potential, and enhanced the unit's activation capability. There were indoctrination lectures by Medical Department personnel of COMPHIBTRALANT, actual participation in amphibious landings, counter-guerrilla training, and visits to the sick bays of the various amphibious ships. Many personnel—both corpsmen and enlisted marines—distinguished themselves in the physical fitness readiness program.

"A Med," whose mission is to train reserve personnel to function as a collecting and clearing company for service with the Fleet Marine Force, is authorized a total of 8 officers and 86 enlisted men. Cdr John W. Walsh MC USNR of Bethesda, Md. is still accepting applications from physicians (preferably surgeons and anesthesiologists), hospital corpsmen, and enlisted marines who are interested in this challenging assignment.

Similar opportunities to perform are available in "B" Company, which drills at the U. S. Naval and Marine Corps Reserve Training Center, Los Angeles, California. In addition, there are vacancies in many of the nineteen Hospital Corps Divisions of the U. S. Naval Reserve. These companies are authorized 48 paid drills and two weeks Active Duty for Training per year.

The locations of the existing Hospital Corps Divisions are listed on the following page.

1-1	Boston, Massachusetts	6-2	Nashville, Tennessee
3-1	St. Albans, New York	9-1	Chicago, Illinois
3-2	Albany, New York	9-2	Detroit, Michigan
4-1	Philadelphia, Pennsylvania	9-3	Kansas City, Missouri
4-2	Pittsburgh, Pennsylvania	9-4	Minneapolis, Minnesota
4-3	Columbus, Ohio	11-1	San Diego, California
4-4	Cleveland, Ohio	12-1	Oakland, California
4-5	Cincinnati, Ohio	12-2	Salt Lake City, Utah
5-1	Bethesda, Maryland	13-1	Seattle, Washington
5-2	Baltimore, Maryland		

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NOTE: The attention of Reserve Medical Officers is invited to the Correspondence Course article on page 18 of this issue of the Medical News Letter.

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POSTAGE AND FEES PAID
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